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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/886,559	06/21/2001	Craig M. Conrad	A1085	7270

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EXAMINER
HYEON, HAE M

ART UNIT	PAPER NUMBER
2839	

DATE MAILED: 03/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/886,559	Applicant(s) CONRAD ET AL.	
	Examiner Hae M Hyeon	Art Unit 2839	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *29 January 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,5-11,13,14 and 16-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,5-11,13,14 and 16-41* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☒ The proposed drawing correction filed on 9-6-02 is: a)☒ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Objections

1. Claim 34 is objected to because of the following informalities: Claim 34, line 6-7 recites, "the outer matrix covering comprising separate regions of a first matrix material adhered respectively to each of **the fiber sub-units** and ..." It seems that "the fiber sub-units" recited in line 7 should be -- the optical fibers -- because the first matrix material adhered individual optical fibers to form a sub-unit and the second matrix material adheres two sub-units together. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

3. Claims 34-41 are rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which applicant(s) regard as their invention. Evidence that claims 34-41 fail(s) to correspond in scope with that which applicant(s) regard as the invention can be found in Paper No. 1 filed June 21, 2001. In that paper, applicant has stated one or more colored regions to denote a number pre-assigned to optical ribbon and another colored region to denote a type of optical fibers, and this statement indicates that the invention is different from what is defined in the claim(s) because claims 34-36 and 39-41 recite an optical ribbon formed by two different matrix materials having different colors and claims 37-38 recite a transparent outer matrix covering to visibly view color of an inner matrix cover that forms an optical ribbon. Furthermore, claim 34 recites the use of two different matrix materials such that the optical

ribbon can be physically separate the optical ribbon at a second matrix material, which does not deal with the color coding. Claims 34-41 do not recite

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 34 and 36 are rejected under 35 U.S.C. 102(e) as being anticipated by Sato et al (6,028,976).

Sato discloses an optical ribbon comprising a plurality of optical fibers 1 and an outer matrix including a first matrix material 4 and a second matrix material 6. The plurality of optical fibers 1 is arranged generally parallel to one another in a generally planar array and is arranged into at least two fiber sub-units 5 each having at least one optical fiber 1. The first matrix material 4 adheres at least one optical fiber to form a sub-unit 5 and the second matrix material 6 joins adjacent fiber sub-units 5 together. Figures 7A and 7B of Sato show that the first matrix material 4 adheres to the fiber sub-units 5 with a greater tenacity than does the second matrix material 6 such that the outer matrix covering preferentially splits at the connecting region between fiber sub-units. Sato teaches that the first matrix material to have a higher modulus of elasticity than the second matrix material.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1, 5-11, 13, 14, and 16-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mims, III in view of Hoffart et al (5,796,905), Hutton et al (6,381,390 B1) and Bonicel et al (5,379,363).

The instant invention is color-coding on a fiber optic ribbon. Figure 3 shows a color code for optical ribbon, which is basically a duplicate of resistor color-coding shown in the book by Mims, III. Regarding the number of colors used in coding and the shapes of coding are an obvious designer's choice since color coding using lines, dashes, dots, concentric circles, bands and the like are already known in the art. Regarding the method of making color-coded optical fiber ribbon, applying a covering, and color over optical fiber by extrusion method is also known in the art. Hoffart, Hutton, and Bonicel disclose various structures and method of color-coding applied to an optical fiber.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to apply color-coding of resistor as taught by Mims, III publication on an optical fiber or an optical ribbon cable using various structure of a color-coding as taught by Hoffart, Hutton, and Bonicel because color-coding would allow a user to easily identify various information about an optical fiber or an optical ribbon cable, which is the basic idea of color-coding. Also, assigning desired information to the color-coding is an obvious designer's choice.

8. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al in view of Thompson (6,532,329 B1).

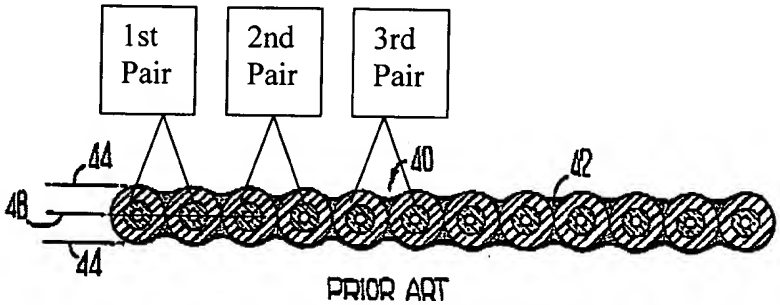
While Sato teaches the use of identifying markings 3, Sato does not dispose the identifying markings 3 at outer surfaces of the first matrix material 4. Instead, Sato placed the identifying markings 3 on individual optical fibers 1. On the other hand, Thompson discloses an optical ribbon comprising identifying markings 22 and 24 disposed at outer surfaces of a first matrix material 14.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the optical ribbon taught by Sato such that it would have identifying markings at outer surfaces of a first matrix material as taught by Thompson because it only deals with rearrangement of the identifying markings on the optical ribbon. Placing the identifying markings either on the outer surface of the first matrix or on the individual optical fibers does not change the function of the optical ribbon. The only change is the location of the identifying markings on the optical ribbon.

9. Claims 37 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jackson et al (4,900,126) in view of Van Dijk et al (US Patent Application Publication 2002/0048797 A1) and Hoffart et al (5,796,905).

Jackson discloses an optical ribbon comprising a plurality of optical fibers 22 arranged generally parallel to one another in a generally planar array. The optical fibers 22 includes at least one adjacent pair of optical fibers are bonded together by a connecting matrix material 42. The connecting matrix material covers less than all of the adjacent pair of optical fibers (see Fig. 3). However, Jackson does not discloses the connecting matrix material having a predetermined

color for identifying the pair of optical fiber or a transparent outer matrix covering that encapsulates and binds together the optical fibers and allows visible observation of the color of the connecting matrix material through the outer matrix covering.



PRIOR ART
FIG 3

Van Dijk teaches that color coding by applying an ink in lines, dashes, dots, concentric circles, bands and the like, or other effective color coding means is known (see paragraph [0003]). Furthermore, Van Dijk teaches coloring the matrix materials that form an optical ribbon for distinguishing various ribbon assemblies (see paragraph [0007]).

Hoffart discloses an optical fiber with a color marking 12 on an inner matrix material 14 covered with a transparent outer matrix 13 that allows visible observation of the color marking 12 on the inner matrix material 14 through the outer matrix covering 13.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the optical ribbon taught by Jackson such that it would have colored matrix material as taught by Van Dijk to identify different pairs of optical fibers in the optical ribbon and would have a transparent outer matrix as taught by Hoffart to allow visible observation of the color makings on an inner matrix material and to protect the optical fibers.

Response to Arguments

10. Applicant's arguments filed on January 29, 2003 have been fully considered but they are not persuasive. The applicant argues that the reference by Mims, III is not proper prior art because it teaches a resistor color code for ascertaining an electrical property, the electrical resistance value (ohms) of the resistor. The examiner agrees that the reference by Mims, III does not have any optical property. However, the concept of the color coding of the resistor and the color coding of the optical ribbon of the instant invention is same. The examiner clearly showed the same concept by drawing a table in the previous office action filed on November 1, 2002. The color coding can be used in any environment with appropriate information for the used environment, whether electrical, optical, animals, or any other objects. The concept and the method of the color coding remain same. The only change is the information assigned to the color coding for the appropriate environment.

11. Applicant's arguments with respect to claims 34-41 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

12. Claims 39-41 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

13. The following is a statement of reasons for the indication of allowable subject matter: Non of the cited references show an optical ribbon comprising a matrix covering having a plurality of different colored regions formed of a first matrix material and bound to less than all of outer surfaces of respective optical fibers for identifying the optical fibers and a second matrix

material that intercedes between and maintains the colored regions substantially separate from one another, wherein the first matrix material adheres to the optical fibers with a greater tenacity than the second matrix material.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent No. 5,956,446 by Benzel, US Patent No. 6,483,972 B1 by Thompson et al., and US Patent No. 6,512,869 B1 by Imayama et al. disclose a splitable optical ribbon.

US Patent No. 6,470,121 B2 by Mills et al. and US Patent No. 6,498,883 B1 by Wilson disclose an optical ribbon with a color coding.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hae M Hyeon whose telephone number is 703-308-4802. The examiner can normally be reached on Mon.-Fri. (8:30-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn D Feild can be reached on 703-308-2710. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Hae M Hyeon
Examiner
Art Unit 2839

hmh hmh
March 19, 2003

Hae Moon Hyeon